P/ NT COOPERATION TREAT

	From th	e INTERNATIONAL B	UREAU
PCT	To:		
NOTIFICATION OF THE RECORDING OF A CHANGE (PCT Rule 92bis.1 and Administrative Instructions, Section 422) Date of mailing (day/month/year)	P.O.	PATENT AB Box 45086 4 30 Stockholm DE	
07 June 2000 (07.06.00)	<u> </u>		
Applicant's or agent's file reference 2008129		IMPORTANT NOT	FICATION
International application No.		nal filing date (day/month/y	
PCT/SE99/01800	0/0	ctober 1999 (07.10.99)	·
The following indications appeared on record concerning: X the applicant X the inventor	the agen	LJ	on representative
Name and Address		State of Nationality SE	State of Residence SE
BOHM, Christer Varpholmsgränd 32 S-127 46 Skärholmen Sweden		Telephone No.	J. OL
		Facsimile No.	
		Teleprinter No.	
2. The International Bureau hereby notifies the applicant that the	he following		_
the person the name X the add	lress [the nationality	the residence
Name and Address		State of Nationality SE	State of Residence
BOHM, Christer Skurusundsvägen 40 S-131 46 Nacka		Telephone No.	
Sweden		Facsimile No.	
		Teleprinter No.	
3. Further observations, if necessary:			
4. A copy of this notification has been sent to:		···	
X the receiving Office	[the designated Offices	concerned
the International Searching Authority	[X the elected Offices cor	cerned
X the International Preliminary Examining Authority	[other:	
The International Bureau of WIPO 34, chemin des Colombettes	Authorized	officer A. Karkachi	
1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740 14 35	Telephone	No.: (41-22) 338.83.38	

ATENT COOPERATION TREA

PCT

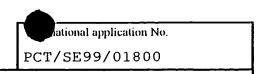


INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PC-2008129	FOR FURTHER ACTION		cation of Transmittal of International v Examination Report (Form PCT/IPEA/416)
International application No.	International filing date (day)	nonth year)	Priority date (day month year)
PCT/SE99/01800	07.10.1999	•	07.10.1998
International Patent Classification (IPC) or		.7	
H04L 12/52, H04L 12/5		,	
1	, 2, -		
Applicant			
NET INSIGHT AB et al.			
This international preliminary examples to the Authority and is transmitted to the Authority and is transmitted.			national Preliminary Examining
2. This REPORT consists of a total o	f 5 sheets, incl	iding this cover	sheet.
been amended and are the b	This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).		
These annexes consist of a total of	These annexes consist of a total of sheets.		
3. This report contains indications rel	3. This report contains indications relating to the following items:		
I Basis of the report	1 Basis of the report		
II Priority			
III Non-establishment of	opinion with regard to novelty	inventive step	and industrial applicability
IV Lack of unity of inver	ntion		
V Reasoned statement under Δrticle 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement			
VI Certain documents cit	ed		
VII Certain defects in the	international application		
VIII Certain observations of	on the international application		
Date of submission of the demand		4	64
13acc or submission of the demand	Date	of completion of	or this report
18.04.2000	23.	02.2001	
Name and mailing address of the IPEA/SE	Auth	orized officer	
Patent- och registreringsverket Por 5055	Tele:: 17078		
s-102 42 strockhold Facsimile No. 08-667 72 88		ckard Ele phone No. 08-	





1. Basis of the report	
1. With regard to the elements of the international ap	pplication:*
the international application as originally fi	led
the description:	
pages	, as originally filed
pages	, filed with the demand
pages	, filed with the letter of
the claims:	
pages	, as originally filed
pages	, as amended (together with any statement) under article 19
pages	, filed with the demand
pages	, filed with the letter of
the drawings:	
	, as originally filed
bañes	, filed with the demand
	. filed with the letter of
the sequence listing part of the description:	11 61 1
	, as originally filed
pages	, filed with the demand
	. filed with the letter of
With regard to the language, all the elements mark the international application was filed, unless other	ced above were available or furnished to this Authority in the language in which
These elements were available or furnished to this	
the language of a translation furnished for the	ne purposes of international search (under Rule 23.1(b)).
the language of publication of the internation	
	the purposes of international preliminary examination (under Rules 55.2 and/
or 55.3).	
	sequence disclosed in the international application, the international
preliminary examination was carried out on the bas	
contained in the international application in	
filed together with the international applicat	ion in computer readable form.
furnished subsequently to this Authority in	
furnished subsequently to this Authority in	
The statement that the subsequently furnish international application as filed has been fu	ed written sequence listing does not go beyond the disclosure in the
The statement that the information recorded	in computer readable form is identical to the written sequence listing has
been furnished.	
4. The amendments have resulted in the cance	llation of:
the description, pages	·
the claims, Nos.	
the drawings, sheet/fig	
	of) the amendments had not been made, since they have been considered to go
5. beyond the disclosure as filed, as indicated in	
	the receiving Office in response to an invitation under Article 14 are referred to ed to this report since they do not contain amendments (Rules 70.16
·	nts must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

_/	
,	ational application No.
P	CT/SE99/01800

V.	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
	citations and explanations supporting such statement

1.	Statement			
	Novelty (N)	Claims Claims	1-12	YES NO
	Inventive step (IS)	Claims Claims	1-12	YES NO
	Industrial applicability (IA)	Claims Claims	1-12	YES NO

2. Citations and explanations (Rule 70.7)

The invention relates to an apparatus for providing routing of asynchronous traffic in a DTM network.

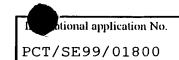
When transferring asynchronous traffic through a circuitswitched synchronous time division multiplexed network, such as a DTM network, a routing mechanism is needed. The routing mechanism is typically provisioned by a dedicated router station, either directly connected to the DTM network or indirectly connected to the DTM network via, e.g. an Ethernet link connecting the router station to a DTM access device. Providing dedicated router station is expensive, thus there is a need for a routing solution in a DTM network which do not incorporate dedicated router stations.

The invention provides a routing solution for a DTM network that does not incorporate dedicated router stations. Instead a circuit board to be connected to a switch core comprises an interface for receiving/transmitting input/output DTM channels from/to the switch core; means for deriving at least a portion of a data packet received, divided into DTM time slots, in one of said DTM channels; routing means, for selecting, based upon at least a portion of a data packet, if said data packet is to be transmitted in one ore more of said output DTM channels and, if so, which one or more of said DTM channels said data packet is to be transmitted to; output means for providing one or more output DTM channels with said data packet, divided into DTM time slots, in accordance with the selection of output DTM channels by said routing means.

The following documents have been cited in the International Search Report:

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT



Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: V

D1: C. Bohm et al., "The DTM Gigabit Network", Journal of High Speed Networks, vol. 3, 1994, pp. 109-126

D2: WO, 9703526, A2

D3: WO, 9417617, A1

D4: WO, 9501031, A1

D5: WO, 9312625, A1

D6: US, 5144619, A

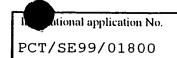
D1 introduces DTM, a circuit-switched synchronous time division multiplexed network architecture.

discloses Document D2 a telecommunications facility transporting data packets having headers and payloads between a plurality of input ports and a plurality of output ports. A concentrator for multiplexing payloads into an incoming data stream and headers into an incoming header stream is provided. A memory controller, responsive to information contained in the headers in the incoming header stream, generates queue control information for relating each data packet to one of a output ports and generates headers plurality of outgoing header stream for packets destined for any of the output ports as well as scheduling information. A distributor directs outgoing headers from an outgoing header stream along with respective payloads from an outgoing payload stream to those of the output ports to which the data packets are destined. A buffer, responsive to the incoming data stream and to the queue control information, queues the payload of each related data packet into a queue associated with the output port to which the payload is destined. The buffer also selects and transfers the queued payload data units of each data packet into an intermediate data stream. A time slot switch receives a frame of payloads from the intermediate data stream and reorders data units from selected payloads into a switched data stream, in response to time slot switching information, The time slot switch also multiplexes reordered data units of a preceding frame of payloads from the switched data stream with the un-selected payloads of data from the intermediate data stream into the outgoing data stream, in response to the scheduling information from the memory controller.

Document D3 discloses an ATM switch, which may be modified to provide a predetermined delay when transmitting information cells, thereby enabling isochronous traffic.

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT



Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: suppl.1

Document D4 discloses a method for avoiding conflicts in a switch core, thereby eliminating the need for cell buffers in the core. Cells are directed through the core by means of tags. A tag is a routing information preceding each cell. Tagging is carried through in the ports. Each tag contains routing information which is not related to the immediately arriving cell, but to some cell following thereafter, thus the cells are delayed in the ports. Processing of the routing information is carried through in the core, after which scheduling information is fed back to the ports.

Document D5 discloses a combined packet and circuit switch.

Document D6 discloses a common memory switch for routing digital information signals on a plurality of switch input channels to selected ones of a like plurality of switch output channels. The signals comprising fixed length digital data cells comprising either ATM cells or STM words, a header having routing information, and a flag which indicates that the cell includes an ATM cell or a STM word.

The invention claimed in claims 1-12 is novel and shows industrial applicability. It is not considered obvious to a person skilled in the art to arriving at the invention departing from any one, or any combination, of documents D1-D6. Consequently, the invention claimed in claims 1-12 is considered to involve an inventive step.

· - **PCT**





INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7: H04L 12/56

A2

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(43) International Publication Date:

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(30) Priority Data:

9803419-2

7 October 1998 (07.10.98)

SE

(71) Applicant (for all designated States except US): NET INSIGHT AB [SE/SE]; P.O. Box 42093, S-126 14 Stockholm (SE).

(72) Inventors; and

- (75) Inventors/Applicants (for US only): LINDGREN, Per [SE/SE]; Maria Prästgårdsgata 12, S-118 52 Stockholm (SE). BOHM, Christer [SE/SE]; Varpholmsgränd 32, S-127 46 Skärholmen (SE). OLSSON, Bengt, J. [SE/SE]; Rådjursvägen 303, S-147 34 Tumba (SE).
- (74) Agent: AWAPATENT AB; P.O. Box 45086, S-104 30 Stockholm (SE).

PT, SE).

Published

Without international search report and to be republished upon receipt of that report.

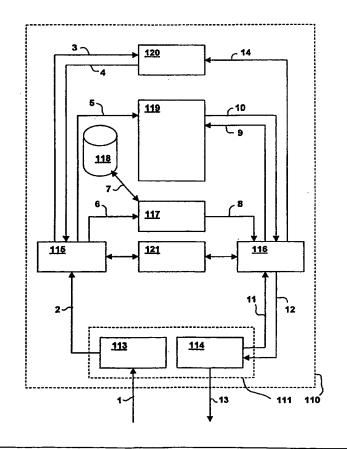
CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,

(81) Designated States: CA, IL, US, European patent (AT, BE, CH,

(54) Title: APPARATUS FOR ROUTING DATA PACKETS IN A DTM NETWORK

(57) Abstract

The present invention refers to a circuit board to be connected to a switch core. According to the invention, the circuit board comprises: an interface (111) for receiving one or more input DTM channels from said switch core and for transmitting one or more output DTM channels to said switch core; means (115) for deriving at least a portion of a data packet received, divided into DTM time slots, in one of said input DTM channels; routing means (117) for selecting, based upon information provided in said at least a portion of a data packet, if said data packet is to be transmitted in one or more of said output DTM channels and, if so, which one or more of said output DTM channels said data packet is to be transmitted in; and output means (116) for providing one or more output DTM channels with said data packet, divided into DTM time slots, in accordance with the selection of output DTM channels made by said routing means.



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A3 10

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(22) International Filing Date:

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(30) Priority Data:

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7 October 1998 (07.10.98)

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With international search report.

(71) Applicant (for all designated States except US): NET INSIGHT AB [SE/SE]; P.O. Box 42093, S-126 14 Stockholm (SE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): LINDGREN, Per [SE/SE]; Maria Prästgårdsgata 12, S-118 52 Stockholm (SE). BOHM, Christer [SE/SE]; Varpholmsgränd 32, S-127 46 Skärholmen (SE). OLSSON, Bengt, J. [SE/SE]; Rådjursvägen 303, S-147 34 Tumba (SE).

(74) Agent: AWAPATENT AB; P.O. Box 45086, S-104 30 Stockholm (SE).

(88) Date of publication of the international search report:

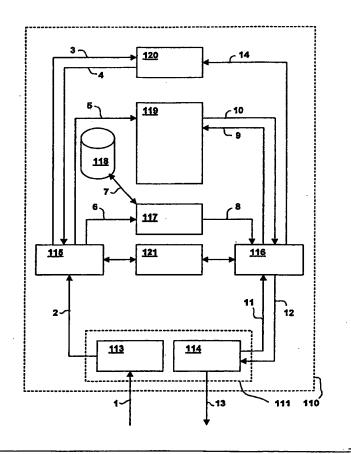
(81) Designated States: CA, IL, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,

13 July 2000 (13.07.00)

(54) Title: APPARATUS FOR ROUTING DATA PACKETS IN A DTM NETWORK

(57) Abstract

The present invention refers to a circuit board to be connected to a switch core. According to the invention, the circuit board comprises: an interface (111) for receiving one or more input DTM channels from said switch core and for transmitting one or more output DTM channels to said switch core; means (115) for deriving at least a portion of a data packet received, divided into DTM time slots, in one of said input DTM channels; routing means (117) for selecting, based upon information provided in said at least a portion of a data packet, if said data packet is to be transmitted in one or more of said output DTM channels and, if so, which one or more of said output DTM channels said data packet is to be transmitted in; and output means (116) for providing one or more output DTM channels with said data packet, divided into DTM time slots, in accordance with the selection of output DTM channels made by said routing means.





INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 99/01800

A. CLASSIFICATION OF SUBJECT MATTER

C. DOCUMENTS CONSIDERED TO BE RELEVANT

IPC7: H04L 12/52, H04L 12/56, H04Q 11/04
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: H04L, H04Q, H04J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	Journal of High Speed Networks, Volume 3, 1994, Christer Bohm et al, "The DTM Gigabit Network, Journal of High Speed Networks" page 109 - page 126	1-12

A	WO 9703526 A2 (NORTHERN TELECOM LIMITED), 30 January 1997 (30.01.97), page 10, line 11 - page 15, line 14, claims 1-25	1-12
		
A	WO 9417617 A1 (TELEFONAKTIEBOLAGET LM ERICSSON), 4 August 1994 (04.08.94), page 30, line 22 - page 32, line 10, claims 1-40	1-12
		l .

A	WO 9417617 A1 (TELEFONAKTIEBOLAGE 4 August 1994 (04.08.94), pag 1ine 22 - page 32, line 10, 	ge 30,
X	Further documents are listed in the continuation of Box (C. X See patent family annex.
*	Special categories of cited documents:	"I" later document published after the international filing date or priority
"A"	document defining the general state of the art which is not considered to be of particular relevance	date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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ı	special reason (as specified)	"V" document of particular relevance; the claimed invention cannot be

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considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art document referring to an oral disclosure, use, exhibition or other document published prior to the international filing date but later than

"&" document member of the same patent family

the priority date claimed Date of the actual completion of the international search Date of mailing of the international search report 1 3 -04- 2000 6 April 2000 Name and mailing address of the ISA/ Authorized officer **Swedish Patent Office** Box 5055, S-102 42 STOCKHOLM Erik Johannesson/CL Facsimile No. +46 8 666 02 86 Telephone No. + 46 8 782 25 00



INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 99/01800

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
A	WO 9501031 A1 (TELEFONAKTIEBOLAGET LM ERICSSON), 5 January 1995 (05.01.95), page 3, line 17 - page 5, line 25, claims 1-24	1-12
A	WO 9312625 A1 (TELEFONAKTIEBOLAGET LM ERICSSON), 24 June 1993 (24.06.93), page 40, line 13 - page 41, line 8, claims 1-19, abstract	1-12
1	US 5144619 A (ERNST A. MUNTER), 1 Sept 1992 (01.09.92), column 2, line 17 - column 3, line 50; column 8, line 36 - column 12, line 20, figure 5, claims 1-10	1-12
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INTERNATIONAL SEARCH REPORT

Information on patent family members

02/12/99

International application No. PCT/SE 99/01800

Patent document cited in search report			Publication date	Patent family member(s)		Publication date	
WO	9703526	A2	30/01/97	CA CN EP US US	2225333 1194073 0838110 5841771 5862136	A A A	30/01/97 23/09/98 29/04/98 24/11/98 19/01/99
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				AU Br	6381798 9406142		18/06/98 12/12/95
				CA CN	2153172 1097535	A	04/08/94 18/01/95
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				US US	5361257 5467347		01/11/94 14/11/95
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				SE US	9302176 5506841		24/12/94 09/04/96
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				CA CN	2121574 1076069		24/06/93 08/09/93
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				JP	7501917	T	23/02/95
				NO SE	942225 469617	B,C	14/06/94 02/08/93
				SE US	9103719 5347513		17/06/93 13/09/94
us	5144619	Α	01/09/92	CA	2058816		12/07/92
				JP JP	2686872 6261058		08/12/97 16/09/94